



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,595	02/09/2004	Koji Akutsu	09788/0200538-US0	3483
7278	7590	10/24/2005	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			HO, ALLEN C	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/776,595

Applicant(s)

AKUTSU ET AL.

Examiner

Allen C. Ho

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 4, 8, 9, 18, and 19 objected to because of the following informalities:

"top board" should be replaced by --top plate--.

Appropriate correction is required.

2. Claim 6 and 13-15 is objected to because of the following informalities:

Line 3, "the" after "between" should be deleted.

Appropriate correction is required.

3. Claim 16 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 16 recites an algorithm that calculates the minimum distance between the x-ray imaging systems. However, claim 5 recites an algorithm that judges whether there is any physical contact between the x-ray imaging systems, which means there is no minimum distance. Therefore, claim 16 contradicts claim 5.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2882

5. Claims 5, 10-12, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5, 10-12, and 16 recite the positional relation detecting means using an algorithm that judges whether there is any physical contact between the x-ray imaging systems. This is incorrectly phrased since the invention is designed to prevent physical contact. The specification discloses an algorithm that judges there is a contact when the distance is smaller than a virtual contact distance (p. 13, last paragraph). This is equivalent to setting a minimum distance between the x-ray imaging systems.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iizuka (U. S. Patent No. 6,435,713 B1) in view of Alexandrescu (U. S. Patent No. 6,272,368 B1).

With regard to claims 1-4, 7-9, and 17-19, Iizuka disclosed a radiographic x-ray device comprising: a plurality of x-ray imaging systems (20, 30, 40) each comprising an x-ray tube (22, 32, 41) and an x-ray detector (21, 31, 42), which are arranged to face each other and are mounted on each end of a support arm (23, 33); a top plate (10) configured to move in reference to a common coordinated system having the mechanical center of the device as the reference point;

Art Unit: 2882

an x-ray imaging system transport mechanism (24, 35, 45) for transporting the x-ray imaging systems using a common coordinate system having a mechanical center of the device as a reference point; a positional relation detecting means (50) for obtaining in real time information regarding positional relations of the x-ray imaging systems (column 5, lines 22 - 29); and an imaging system transport control means (50) for controlling the x-ray imaging system transport mechanism (column 2, line 64 - column 3, line 21) in accordance with the information regarding the positional relations of the x-ray imaging systems detected by the positional relation detecting means.

However, although Iizuka disclosed a positional relation detecting means (50) that monitors the positions of the x-ray imaging systems, Iizuka failed to disclose a means (electrical sensors or light sensors, etc.) by which the positional relation detecting means monitors the positions of the x-ray imaging systems.

Alexandrescu disclosed a radiological x-ray device comprising: a shape data registering means (11, 15) for registering external shape data of three-dimensional models corresponding to three-dimensional shapes of an x-ray imaging system (1, 2, 3) and a patient support (8) (column 3, lines 21 - 36); and a positional relation detecting means (14) for obtaining in real time information regarding positional relations of the x-ray imaging system and the patient support based on current positions of x-ray imaging system and the patient support, and the external shape data of the three dimensional model. As pointed out by Alexandrescu, the advantage of this shape data registering means is that every object in the room in which the radiological x-ray device is installed could be scanned and registered (column 2, lines 5 - 15).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the radiographic x-ray device disclosed by Iizuka with the shape data registering means disclosed by Alexandrescu, since a person would be motivated to prevent a collision between various objects (*e. g.* x-ray imaging systems, patient support, personnel) within the radiographic x-ray device by monitoring the positions and the positional relations of the various objects.

With regard to claims 5, 6, and 10-16, Iizuka and Alexandrescu disclosed a radiographic x-ray device of claims 1-4, wherein the positional relation detecting means obtains the information regarding the positional relations of the x-ray imaging systems using an algorithm that calculates the minimum distance (spacing) between the x-ray imaging systems (column 3, line 54 - 61).

Allowable Subject Matter

8. The previously indicated allowable subject matter is withdrawn in view of the newly discovered reference(s) to Alexandrescu (U. S. Patent No. 6,272,368 B1).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

Art Unit: 2882

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho
Primary Examiner
Art Unit 2882

18 October 2005